

**IN THE CLAIMS:**

- 1    1. (CURRENTLY AMENDED) A method for performing a scheduling assist function,  
2    the method comprising the steps of:
  - 3        receiving a request to schedule an event;
  - 4        calculating an expiration time associated with the event using information con-  
5        tained in the request, the information including a byte length and an inverted rate, the in-  
6        formation describing an output channel;
  - 7        determining if conditions are met to issue a notification, the conditions at least  
8        including that the expiration time has been reached; and
  - 9        issuing a notification if conditions are met.
- 1    2. (CANCELLED)
- 1    3. (CURRENTLY AMENDED) The method of claim 2 1 wherein the step of calculating  
2        an expiration time using information contained in the request further comprises the steps  
3        of:
  - 4        multiplying the byte length by the inverted rate; and
  - 5        adding a current time if the event is idle otherwise adding an old expiration time.
- 1    4. (ORIGINAL) The method of claim 1 wherein the step of determining if conditions are  
2        met to issue a notification further comprises the steps of:
  - 3        (a) comparing a current time to an expiration time; and
  - 4        (b) concluding the conditions are met to issue a notification if the expiration time
  - 5        is less than OR equal to the current time.
- 1    5. (ORIGINAL) The method of claim 4 further comprising before step (a) the steps of:

2           selecting an event table entry from a plurality of event table entries in an event  
3   table; and  
4           selecting the expiration time from a plurality of expiration times contained in the  
5   selected event table entry.

1   6. (ORIGINAL) The method of claim 5 wherein the step of selecting an event table from  
2   a plurality of event table entries in an event table further comprises the step of:  
3       selecting the event table entry using a scanning table.

1   7. (ORIGINAL) The method of claim 4 further comprising after step (a) the steps of:  
2       determining if an output command queue associated with the event is above a  
3   threshold; and  
4       performing step (b) if the output command queue is above the threshold.

1   8. (ORIGINAL) The method of claim 4 further comprising after step (a) the steps of:  
2       determining if a flow bit associated with the event indicates busy; and  
3       performing step (b) if the flow bit does not indicate busy.

1   9. (ORIGINAL) The method of claim 4 further comprising after step (a) the steps of:  
2       determining if a notification queue can receive a notification; and  
3       performing step (b) if the notification queue can receive a notification.

1   10. (ORIGINAL) The method of claim 1 further comprising the step of:  
2       updating status information associated with the event.

1   11. (ORIGINAL) The method of claim 1 wherein the step of determining if conditions  
2   are met to issue a notification further comprises the steps of:  
3       (a) comparing a current time to an expiration time minus a notification threshold;  
4       and

5                   (b) concluding the conditions are met to issue a notification if the expiration time  
6 minus the notification threshold is less than OR equal to the current time.

1       12. (CURRENTLY AMENDED) A computer readable medium containing executable  
2 instructions for performing ~~the method recited in claim 1-a scheduling assist function, the~~  
3 executable program instructions for:

4                   receiving a request to schedule an event;  
5                   calculating an expiration time associated with the event using information con-  
6 tained in the request, the information including a byte length and an inverted rate, the in-  
7 formation describing an output channel;  
8                   determining if conditions are met to issue a notification, the conditions at least  
9 including that the expiration time has been reached; and  
10                  issuing a notification if conditions are met.

11  
12       13. (CURRENTLY AMENDED) The computer readable medium of claim 12 ~~wherein~~  
13 ~~the information contained in the request comprises a byte length and an inverted rate and~~  
14 further comprising computer executable instructions for performing:

15                  multiplying the byte length by the inverted rate; and  
16                  adding a current time if an event is idle otherwise adding an old expiration time.

1       14. (ORIGINAL) The computer readable medium of claim 12 further comprising com-  
2 puter executable instructions for performing:  
3                  (a) comparing a current time to the expiration time; and  
4                  (b) concluding conditions are met to issue a notification if the expiration time is  
5 less than OR equal to the current time.

1       15. (CURRENTLY AMENDED) The computer readable medium of claim 12 further  
2 comprising computer executable instructions before step (a) for performing:

3           selecting an event table entry from a plurality of event table entries in an event  
4   table; and

5           selecting the expiration time from a plurality of expiration times contained in the  
6   selected event table entry.

1   16. (ORIGINAL) The computer readable medium of claim 15 wherein the step of select-  
2   ing an event table from a plurality of event table entries in an event table further compris-  
3   ing computer executable instructions for performing:

4           selecting the event table entry using a scanning table.

1   17. (CURRENTLY AMENDED) The computer readable medium of claim 1214 further  
2   comprising computer executable instructions for performing after step (a):

3           determining if an output command queue associated with the event is above a  
4   threshold; and

5           performing step (b) if the output command queue is above the threshold.

1   18. (CURRENTLY AMENDED) The computer readable medium of claim 1214 further  
2   comprising computer executable instructions for performing after step (a):

3           determining if a flow bit associated with the event indicates busy; and  
4           performing step (b) if the flow bit does not indicate busy.

1   19. (CURRENTLY AMENDED) The computer readable medium of claim 1214 further  
2   comprising computer executable instructions for performing after step (a):

3           determining if a notification queue can receive a notification; and  
4           performing step (b) if the notification queue can receive a notification.

1   20. (CURRENTLY AMENDED) An apparatus configured to perform a scheduling assist  
2   function the apparatus comprising:

3           means for receiving a request to schedule an event;

4       means for calculating an expiration time associated with the event using informa-  
5    | tion contained in the request, the information including a byte length and an inverted rate;  
6       means for determining if conditions are met to issue a notification; and  
7       means for issuing a notification if conditions are met to issue a notification.

1    21. (CANCELLED)

1    22. (ORIGINAL) The apparatus of claim 20 wherein the means for calculating an expira-  
2    tion time using information contained in the request further comprises:  
3       means for multiplying the byte length by the inverted rate; and  
4       means for adding an old expiration time if an event is idle otherwise adding a cur-  
5    rent time.

1    23. (ORIGINAL) The apparatus of claim 20 wherein the means for determining if condi-  
2    tions are met to issue a notification further comprises:  
3       means for comparing a current time to the expiration time; and  
4       means for concluding conditions are met to issue a notification if the expiration  
5    time is less than OR equal to the current time.

1    24. (ORIGINAL) The apparatus of claim 23 further comprising:  
2       means for selecting an event table entry from a plurality of event table entries in  
3    an event table; and  
4       means for selecting the expiration time from a plurality of expiration times con-  
5    tained in the selected event table entry.

1    25. (ORIGINAL) The apparatus of claim 24 wherein the means for selecting an event  
2    table from a plurality of event table entries in an event table further comprises:  
3       means for selecting the event table entry using a scanning table.

- 1    26. (ORIGINAL) The apparatus of claim 23 further comprising:
  - 2                means for determining if an output command queue associated with the event is
  - 3                above a threshold; and
  - 4                means for concluding conditions are met to issue a notification if the expiration
  - 5                time is less than OR equal to the current time and the output command queue is above the
  - 6                threshold.
- 1    27. (ORIGINAL) The apparatus of claim 23 further comprising:
  - 2                means for determining if a flow bit associated with the event indicates busy; and
  - 3                means for concluding conditions are met to issue a notification if the expiration
  - 4                time is less than OR equal to the current time and the flow bit does not indicate busy.
- 1    28. (ORIGINAL) The apparatus of claim 23 further comprising:
  - 2                means for determining if a notification queue can receive a notification; and
  - 3                means for concluding conditions are met to issue a notification if the expiration
  - 4                time is less than OR equal to the current time and the notification queue can receive a no-
  - 5                tification.
- 1    29. (CANCELLED)
- 1    30. (CANCELLED)
- 1    31. (CANCELLED)
- 1    32. (CANCELLED)
- 1    33. (CANCELLED)

1    34. (CURRENTLY AMENDED) A method for determining when a packet can be de-  
2    queued to an output channel, the method comprising the steps of:  
3    ~~The method of claim 32 wherein the request comprises:~~  
4        scheduling an event associated with the output channel by issuing a request to a  
5        scheduling assist function, the request including a byte length associated with the packet;  
6        and an inverted-a rate associated with the output channel.; and  
7        receiving a notification when the output channel becomes available.

1    35. (CURRENTLY AMENDED) A method of scheduling an event comprising the  
2    steps of:  
3        receiving, from a processor, a request to schedule an event, the request containing  
4        information describing the characteristics of an output channel associated with the event,  
5        the information including a byte length and a rate associated with the output channel;  
6        calculating an expiration time associated with the event from the information de-  
7        scribing characteristics of the output channel;  
8        determining if the output channel associated with the event is available;  
9        comparing the expiration time with a current time and determining if the expira-  
10      tion time has been reached; and  
11        in response to determining that the output channel is available and that the expira-  
12      tion time has been reached, issuing a notification to the processor, the notification indi-  
13      cating the event is to be serviced.

1    36. (CANCELLED)

1    37. (PREVIOUSLY PRESENTED) The method of claim 36 wherein the step of com-  
2    paring further comprises the step of:  
3        Selecting an entry in an event table for comparison, each entry containing a plurality  
4        of event expiration times associated with events, and comparing the plurality of event ex-  
5        piration times to the current time.

1       38. (PREVIOUSLY PRESENTED) The method of claim 35 wherein the step of comparing further comprises the step of:  
2                     subtracting a notification threshold from the expiration time prior to comparing.

1       39. (PREVIOUSLY PRESENTED) The method of claim 35 wherein the step of determining further comprises the steps of:  
2                     determining if a flow bit associated with the event indicates busy; and  
3                     performing the step of issuing a notification only if the flow bit does not indicate  
4                     busy.  
5

1       40. (CURRENTLY AMENDED) ~~The method of claim 35 further comprising the steps of:~~

3       A method of scheduling an event comprising the steps of:

4             receiving, from a processor, a request to schedule an event, the request containing  
5             information describing the characteristics of an output channel associated with the event;  
6             calculating an expiration time associated with the event from the information de-  
7             scribing characteristics of the output channel;  
8             determining if the output channel associated with the event is available;  
9             comparing the expiration time with a current time and determining if the expira-  
10             tion time has been reached;  
11             determinining if a notification queue can receive the-a notification; and  
12             in response to determining that the output channel is available and that the expira-  
13             tion time has been reached, performing the step of issuing a-the notification only if the  
14             notification queue can receive a-the notification., the notification indicating the event is to  
15             be serviced.

1       41. (CURRENTLY AMENDED) A method for a processor to offload even scheduling,  
2             comprising the steps of:

3 issuing a request to schedule an event to a separate scheduling assist function, the  
4 request containing information describing an output channel associated with the event,  
5 | the information including a byte length and a rate associated with the output channel suf-  
6 | ficient to calculate an expiration time for the event at the output channel; and  
7 | when the expiration time is less than OR equal to a current time, receiving a notifi-  
8 | cation from the scheduling assist, the notification indicating the event is to be serviced.

1 42. (CURRENTLY AMENDED) An apparatus for scheduling an event comprising:  
2 | means for receiving, from a processor, a request to schedule an event, the request  
3 | containing information describing an output channel associated with the event, the infor-  
4 | mation including a byte length and a rate associated with the output channel;  
5 | means for calculating an expiration time associated with the event from the informa-  
6 | tion describing the output channel;  
7 | means for determining if the output channel associated with the event is available;  
8 | means for comparing the expiration time with a current time and determining if the  
9 | expiration time has been reached; and  
10 | means for issuing a notification to the processor, the notification indicating the event  
11 | is to be serviced, in response to determining that the output channel is available and that  
12 | the expiration time has been reached.

1 43. (CANCELLED)

1 | 44. (CURRENTLY AMENDED) The apparatus of claim 43 42 further comprising:  
2 | means for selecting an entry in an event table for comparison, each entry containing  
3 | a plurality of event expiration times associated with events, and comparing the plurality  
4 | of event expiration times to the current time.

1 | 45. (CURRENTLY AMENDED) The apparatus of claim 43 42 further comprising:

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2       means for subtracting a notification threshold from the expiration time prior to com-  
3       paring.

1     46. (CURRENTLY AMENDED) The apparatus of claim 4342 further comprising:  
1       means for determining if a flow bit associated with the event indicates busy; and  
2       means for performing the steps of issuing a notification only if the flow bit does not  
3       indicate busy.

1     47. (CURRENTLY AMENDED) The apparatus of claim 4342 further comprising:  
1       means for determining if a notification queue can receive the notification; and  
2       means for performing the steps of issuing a notification only if the notification  
3       queue can receive a notification.

1     48. (CURRENTLY AMENDED) A computer readable medium containing executable  
2       program instructions for scheduling an event, the executable program instructions com-  
3       prising program instructions for:

4           receiving, from a processor, a request to schedule an event, the request containing  
5       information describing the characteristics of an output channel associated with the event,  
6       the information including a byte length and a rate associated with the output channel;  
7           calculating an expiration time associated with the event from the information de-  
8       scribing characteristics of the output channel;  
9           determining if the output channel associated with the event is available;  
10          comparing the expiration time with a current time and determining if the expira-  
11       tion time has been reached; and  
12          in response to determining that the output channel is available and that the expira-  
13       tion time has been reached, issuing a notification to the processor, the notification indi-  
14       cating the event is to be serviced.

1    49. (CURRENTLY AMENDED) A computer readable medium containing executable  
2    program instructions for enabling a processor to offload event scheduling, the executable  
3    program instructions comprising program instructions for:  
4       issuing a request to schedule an event to a separate scheduling assist function, the  
5       request containing information describing an output channel associated with the event,  
6       the information including a byte length and a rate associated with the output channel suf-  
7       ~~ficient~~ to calculate an expiration time for the event at the output channel; and  
8       when the expiration time is less than OR equal to a current time, receiving a notifi-  
9       cation from the scheduling assist, the notification indicating the event is to be serviced.